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L7 ANSWER 15 OF 16 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 8

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TITLE: Urea having a low ammonium carbamate content

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ZA 6804613	A	19681212	ZA 1968-4613	19680602
NO 145949	B	19820322	NO 1968-2461	19680621
NO 145949	C	19820630		
NL 161137	C	19800115	NL 1968-8895	19680625
NL 161137	B	19790815		
JP 54032767	B4	19791016	JP 1968-47203	19680708
CS 155191	B2	19740530	CS 1968-6495	19680916

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AB CO₂ is treated with excess NH₃ to give urea (I) that is contaminated with NH₂CO₂NH₄ (II) and unreacted NH₃. Thin films of the product are passed over a heated surface, which decompose a portion of II, and the decomposition products (NH₃ and CO₂) are recycled to leave I with reduced II content. E.g., NH₃ and CO₂ were combined (3:1 mole ratio) at 180° and 150 atmospheric to yield 55% I (based on CO₂) that contained 48% II. The product was passed over the surfaces of a thin-film heat exchanger operating at the same conditions as the reactor to yield I that contained only 8% II.